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AMLA – ENRICHED LOZENGES FOR NATURAL ANTIMETIC ACTION.

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• Abstract

Natural remedies from plants help people live healthy, disease free lives. In tropical and subtropical regions. *Phyllanthus emblica*, often known as amla, is readily available and has the ability to treat harmful ailments. (1) Prior to its high vitamin C content, polyphenols like tannins, gallic acid, ellagic acid, and flavonoids like quercetin and rutin, it was already a well-known fruit. *Emblica officinalis*, a natural and potent antioxidant, has the highest natural supply of vitamin C. (2) The nutritional benefits, potent phytochemistry, and health-enhancing properties of amla are the focus of this review. Scientific evidence indicates that polyphenols are central components in fruits and other sections of the amla tree, as well as vitamin C. Different amla extracts have potent antimicrobial properties that can combat various bacterial pathogens. (3) Amla phytochemicals also possess antioxidant, anti-inflammatory, hepatoprotective, cardioprotective, immunomodulatory, hypolipidemic, memory enhancing, anticancer, antidiabetic, antidepressant, anti-ulcerogenic, insecticidal, larvicidal, and wound healing activities. (4)

• KEYWORDS – Amla, Antiemetic, Antivomiting, Gastric motility regulation, Phytochemicals.

• INTRODUCTION

Amla (*Emblica officinalis*), an ancient Indian medical system, holds a revered place. Indian mythology holds that amla, a member of the *Euphorbiaceae* family and also known as *Phyllanthus emblica* or Indian gooseberry, was the first tree to be formed in the universe. (5) Amla is a native of India and also grows in Pakistan, Uzbekistan, Sri Lanka, South East Asia, China, and Malaysia in tropical and subtropical climates. Amla aids digestion and the immune system by providing antioxidants like gallic acid, ascorbic acid, and phenolic compounds. (6) Amla is one of the best sources of vitamin C, minerals, and amino acids and has phenols, alkaloids, and tannins, among other chemical components. (7) Two of the four hydrolysable tannins that have been reported to have biological activity are gallic acid, ellagic acid, and emblicanin A and B. (8) In addition, it helps control cholesterol and improve memory in ophthalmic disorders. (9) It also works as an antimicrobial and helps neutralize snake venom. (10) The development of therapeutic drugs and medicines that are both effective and complementary or alternative can be found in abundance in plants and herbs. (11) Numerous drugs have been developed over the years that have significantly improved human health and well-being. (12) According to Shanmugasundaram (1983), the fruit of the plant is used as a potent *rasayana* in Ayurveda to treat a variety of ailments, including dysentery, inflammation, jaundice, and diarrhea. (13) This plant fruit is mostly eaten in India as pickles and has diuretic properties (Unandar et al., 1990). (14) Amla (Indian gooseberry) has incredible healing properties and is an essential component of the Ayurvedic and Unani systems. (15) One of

the most popular botanicals, the fruit of *Phyllanthus emblica* has numerous uses in the food, healthcare, and cosmetic industries. In ancient Indian mythology, it is believed to be the first tree in the universe. (16)

- Taxonomical classification [(17,18)]

- Kingdom-Plantae
- Class-Dicotyledonae
- Order-Germiales
- Family-Euphorbiaceae
- Genus-*Emblica* Species
- Species- *officinalis* Geartn
- Vernacular names-
- English- *Emblica myrobalan*
- Indian- Goose berry
- Indian goose berry
- Sanskrit- Aamalaki
- Hindi- Amla
- Kannada- Nelli Kayi
- Marathi- Amla
- Gujarati- Ambla
- Malayalam- Nelli Kayi
- Tamil- Nelli
- Telugu-Usirikaya
- Kashmir- Aonla



Amla fruit



Amla seed

- MORPHOLOGY [(19,20)]

- Botanical name- *Emblica officinalis*
- Family- Euphorbiaceae
- Parts used- Fresh or dried fruit
- constituent Chemical - Tannins; phyllembelin-gallic acid; ellagic acid and glucose; pectins and vitamin c
- Uses- Liver tonic, as a purgative, treatment of jaundice, dyspepsia and cough; cooling, diuretic, anti-bacterial and anti- fungal; anti- spasmodic; used in gastritis syndrome
- Phytochemical constituent
- Tannin-
Emblicanin A, Emblicanin B, Punigluconin, and Pedunculagin are just a few of the *Phyllanthus emblica* tannins that make up a special group of hydrolysable polyphenols with a lot of antioxidant power. (21) The fruit anti-emetic, anti- ulcer, and gastroprotective properties are largely due to these

compounds. (22) The pharmacological significance of amla tannins lies in their capacity to regulate neurotransmitter mediated emetic response, maintain mucosal integrity, and maintain cellular redox balance.(23)

- Phenolic compounds-

In *Emblica officinalis*, phenolic compounds are a significant subset of bioactive secondary metabolites that are responsible for the plant antioxidant, anti- inflammatory, anti- aging, and chemoprotective properties. (24) Biomolecules are shielded from oxidative stress by these compounds, which have one or more hydroxyl groups attached to an aromatic ring and are known to scavenge free radicals and chelate metal ions. (25) Hydrolyzable tannins, gallic acid derivatives, and ellagitannins are the main phenolic compounds found in amla, along with smaller amounts of simple phenolic acids and flavonoid phenolics. (26)

- Alkaloids-

- Mechanism of action for Antiemetic drugs multiple mechanism contribute to the antiemetic effects of amla alkaloids. Modulation of serotonergic (5-HT₃) pathways. (27)

- Alkaloids have the ability to interact with 5-HT₃ receptors in the gastrointestinal tract and the chemoreceptor trigger zone (CTZ). (28) Effect: Toxin- or chemotherapeutic-induced nausea and vomiting are lessened by inhibiting receptor activation. (29) Supporting Evidence: Alkaloids of the Indole family, have structural similarities to known serotonergic modulators, like phyllanthidine. (30).

- Anti- inflammatory and gastroprotective effects alkaloids reduce oxidative stress and stabilize the gastric mucosa. (31) By protecting the gastrointestinal lining, alkaloids reduce stimuli that trigger the vomiting reflex. (32) For instance, phyllantine and phyllanthidine reduce gastric model inflammation, which indirectly contributes to their antiemetic activity. (33)

- Activity as an Antioxidant vomiting and nausea can be brought on by oxidative stress in the brain and gut. Alkaloids in amla exhibit free radical scavenging, reducing oxidative triggers for emesis. (34)

Combines well with phenolic and tannin compound to work together. (35)

- Advantages of amla

- Enhances immunity-Amla has antibacterial and astringent characteristics that boost the immune system of the body. (36) Indian gooseberry also boosts white blood cells, which aid in the body detoxification process. (37) Amla is a natural, plant -based option that can help in alleviating nausea and vomiting without the side effects associated with synthetic anti – emetic drugs. It can be used in mild cases of nausea. (38) Anti- inflammatory properties; Inflammation in the digestive system can lead to nausea.(39) Amla has potent anti- inflammatory properties that help reduce this inflammation, thus minimizing symptoms like nausea and vomiting.(40)

- BENEFITS FOR THE STOMACH-AMLA

Has been shown to possess gastroprotective qualities by strengthening the digestive system. (41) It encourages the secretion of bile and gastric juices, which can help with digestion and lessen nausea caused by indigestion or other stomach problems. (42) How to avoid gastric ulcers; Amla ability to protect the stomach lining and reduce gastric acid secretion may help prevent the development of ulcers or irritation, which are known causes of nausea and vomiting. (43)

- Conclusion-

Amla is an ancient Indian medical system, holds a revered place. The fruits of the amla tree are used often in ayurveda medicine and are thought to strengthen the body defences against illness. (44) These qualities are effective in the treatment and prevention of a wide range of illness including anaemia, liver, heart, and cancer as well as atherosclerosis, diabetes, peptic ulcers, aneurysms, and other conditions (45).

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